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ABSTRACT

School integration was accomplished by three major procedures: (1) Faculties at all schools were integrated; (2) Two all-black high schools and two all-black middle schools were closed. Students were provided with free transportation to predominantly white schools; and (3) 27 elementary schools were combined into six clusters, each cluster comprising one all-black school and several white-majority schools. The former all-black school became a Kindergarten-Grade Two school, to which all second grade white children in the cluster schools were assigned. All of the third through fifth grade black students were assigned in appropriate numbers to each of the former white schools in the cluster. Free transportation was provided. Evaluation procedures focused on scholastic growth of both black and white bused students. Standardized tests were administered to all fourth and fifth grade children in the cluster schools in the fall and in the spring to assess growth during the year in reading and mathematics. Reading tests were administered to all second grade children in the fall and spring. Tests were also administered to children attending similar schools not involved in the integration procedures for comparative purposes. An effort was also made to assess any extent to which children in cluster schools might choose to isolate or reject children of an ethnicity other than their own. (Author/JM)

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SHORT-TERM DESEGREGATION EFFECTS:

THE ACADEMIC ACHIEVEMENT

OF BUSED STUDENTS

1971-72

Prepared for

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UD 014005

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INTRODUCTION

Desegregation Procedures

In June, 1971, the Fifth Circuit Court of Appeals in New Orleans ruled that integration in the Fort Worth Independent School District did not meet guidelines as set forth by recent Supreme Court decisions.

To comply with this ruling, a plan was submitted calling for integration of faculties while maintaining the concept of neighborhood schools. This plan was unacceptable to the Court, and the school system was ordered to establish a system that would eliminate all vestiges of segregation.

Consequently, a plan to conform to this Court order was devised by the administrative staff and approved by the local school board. It was submitted to and obtained the approval of the U. S. District Court on July 17, 1971, to be effective August 30, 1971.

The plan (Exhibits A and B) included three major procedures:

- 1) Faculties at all schools were integrated to produce a ratio of black-to-white* teachers (78% white, 22% black) similar to that of the scholastic population.
- 2) Two all-black high schools (Como and Kirkpatrick) and two all-black middle schools (I. M. Terrell and Kirkpatrick) were closed. Students were provided with free transportation to predominantly white schools.
- 3) Twenty-seven elementary schools were combined into six clusters, each cluster consisting of one all-black school

*For the purposes of this paper, white refers to non-black persons.

EXHIBIT A

Fort Worth Public Schools
Integration Plan - 1971

Approved by Federal District Judge Leo Brewster, July 17, 1971

Highlights of the Overall Plan

- Integrated faculty - 78% white, 22% black in all schools, approximately
- Closing of black schools--Kirkpatrick High School, Como High School, Terrell Middle School, Kirkpatrick Middle School
- Majority to minority transfer--a pupil may transfer from his school where his race is in the majority to a school where his race is in the minority with bus transportation provided
- Elementary clusters--twenty-seven elementary schools combined into six clusters

Cluster Plan

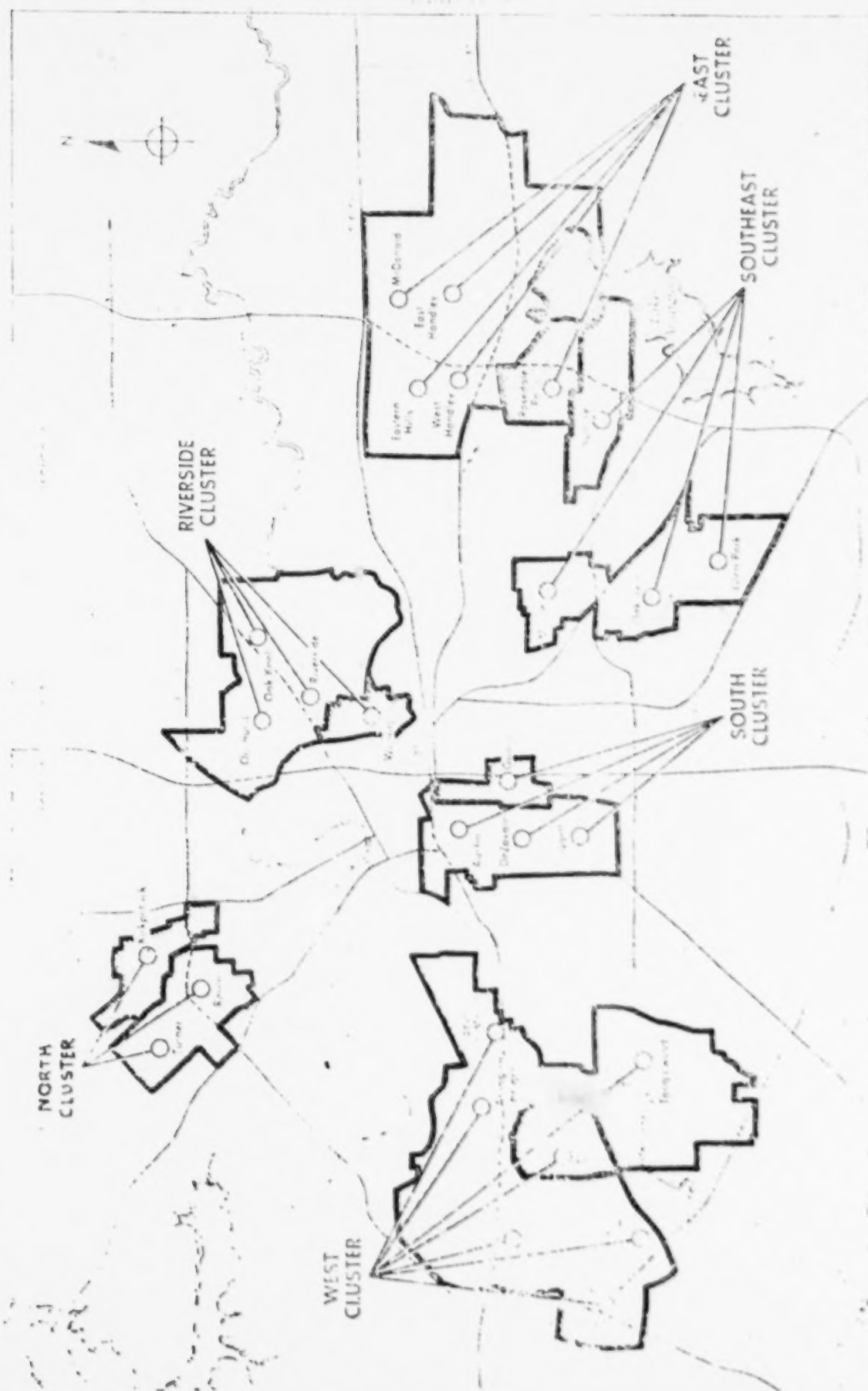
Each of the six clusters will operate in the following manner:

- 1) The former all black school will contain kindergarten and grades one and two.
- 2) The former white schools in the cluster will contain kindergarten (schools #28 and #41 do not have kindergarten), and grades one, three, four, and five.
- 3) All pupils will attend their neighborhood school for kindergarten and grade one.
- 4) Grade two will be offered only in the former black school. Pupils from all schools in the cluster will attend second grade in that school.
- 5) Pupils from the former black school will attend one of the white schools for grades three, four, and five. These pupils will be divided by neighborhood and will attend the nearest white school in the cluster.
- 6) Free bus transportation will be provided for those desiring it. Buses will operate through the neighborhood on a specific route and time schedule. No child will be required to travel more than three blocks to a bus stop nor leave home more than ten minutes earlier than in the past.
- 7) Requests for transfers of pupils to schools outside the cluster will not be granted. Preexisting transfers will remain in force.
- 8) All schools in the cluster will be integrated with whites in the majority among pupils and faculty.

The Rationale Behind the Cluster Plan:

- 1) The integration of these six black schools will eliminate the last vestiges of the dual system in Fort Worth. This is what the New Orleans Court ordered based upon recent Supreme Court decisions. With this plan the Fort Worth schools will be a unitary system.
- 2) The second grade was chosen because these younger children, yet to develop prejudice, will accept each other for what they are, not for the color of their skin.
- 3) The secondary schools are already fairly well integrated.
- 4) Starting integration with young children eliminates problems of violence and sex found with initial integration among older pupils.
- 5) Second graders will be easier to bus, in fact, they will enjoy the experience.
- 6) With the cluster plan, busing will be minimal; time and distance will be quite short--a maximum of four miles and approximately nine minutes.
- 7) The neighborhood concept has not been destroyed--white pupils will attend their neighborhood schools eleven of their twelve years, black children will attend their neighborhood schools nine of their twelve years. The reason for blacks being moved three years with whites only one is that it is the only way to achieve the proper ratio--three blacks must be moved to one white.

(A map and a chart of the clusters are attached for your information.)



and several white-majority schools. The former all-black school became a Kindergarten-Grade 2 school, to which all second grade white children in the cluster schools were assigned. All of the third, fourth, and fifth grade black students, normally assigned to that former all-black school, were assigned in appropriate numbers to each of the former white schools in the cluster. Free transportation was provided for all children assigned to schools out of their immediate neighborhood. It was expected that approximately 1600 black and 1600 white children would be transferred. Details of the cluster plan, including a map, are contained in Exhibits A and B.

Procedures for Evaluation of the Cluster Plan

Evaluation procedures focused on scholastic growth of both black and white based students.

Academic Testing Procedures

Standardized tests (Iowa Tests of Basic Skills) were administered to all fourth and fifth grade children in the cluster schools in the fall and in the spring to assess growth during the year in reading and mathematics skills. Reading tests (Gates-MacGinitie Reading Tests) were administered to all second grade children in the fall and spring.

Tests were also administered to children attending similar schools not involved in the integration procedures for comparative purposes. These schools were selected as being most similar, individually and collectively, to cluster schools on the basis of ethnicity and previous academic achievement. For the purpose of the study, fifty per cent of the classes in the comparative schools were randomly selected for spring posttesting.

This pre-post, experimental-control design allowed the following comparisons:

- 1) Academic growth of bused black fourth and fifth grade students with that of black students continuing to attend home schools in predominantly black neighborhoods;
- 2) Growth in reading skills of bused white second grade children with that of white second graders continuing to attend home schools in predominantly white neighborhoods.

All tests were administered in the fall routinely as part of the city-wide testing program by home room teachers. An attempt to standardize the administration of the spring tests was made. The principal, or his designee, was asked to administer the tests to fourth and fifth graders. The reading teachers, assigned to various schools by the Reading Clinic, administered the tests to second graders.

It was felt that collection of data from two intermediate grades would provide sufficient evidence with which to assess the academic effects on intermediate students. For this reason, third graders were not included in the assessment.

Sociometric Data

An effort was also made to assess any extent to which children in cluster schools might choose to isolate or reject children of an ethnicity other than their own. For this purpose, a twenty-five per cent random sample of cluster teachers asked their students to name three classmates with whom they would like to sit at lunch. These sociometric data were gathered toward the beginning and at the end of the year. This collection of data allowed the computation of the percentages of each ethnic group--black, white, and brown--making exclusive in-group choices. Changes during the year were thus assessable.

Comparative Schools

As previously stated, cluster schools were matched with schools basically similar in the ethnicity and academic achievement of students. Schools chosen as comparative schools for white students are identified in Table 1.

Table 1. Comparison Schools* for White Cluster Students

Cluster Schools			Comparison Schools		
School	ITBS Gr. 4 1970-71 (GE)	Ethnicity** 1970-71	School	ITBS Gr. 4 1970-71 (GE)	Ethnicity** 1970-71
W. J. Turner	3.4	20% MA	M. H. Moore	3.5	25% MA
Sam Rosen	3.5	20% MA			
South Hi Mount	4.4	6% MA	Benbrook	4.2	4% MA
Arlington Hts.	4.2		B. H. Carroll	4.3	17% MA
Ridglea West	4.3		North Hi Mount	4.3	
Tanglewood	5.0		J. T. Stevens	4.9	
M. L. Phillips	4.7		J. P. Moore	4.7	
Ridglea Hills	4.8		Bruce Shulkey	4.8	
West Handley	3.9		George Clarke	3.9	19% MA
East Handley	4.1		Hubbard	4.2	16% MA
A. McDonald	4.4		Western Hills	4.4	
Eastern Hills	4.6		Westcliff	4.6	
Riverside	3.6	8% MA	L. B. Clayton	3.6	
Oakhurst	4.1		Forest Hill	4.0	
Oak Knoll	3.8	11% MA	Sagamore Hill	3.8	
Glen Park	3.7	4% MA	Carter Park	3.9	
Oaklawn	3.9		Tandy	3.8	
D. McRae	3.5		Poly	3.5	
S. F. Austin	3.3	28% MA	W. M. Green	3.4	5% MA
DeZavala	3.4	33% MA	So. Ft. Worth	3.6	27% MA
Daggett	3.6	20% MA			
Aggregate*** (Approximate)	4.0	7% MA		4.1	6% MA

*The comparison schools were selected to match with clusters rather than individual schools on academic achievement. Ethnicity matched well with the total group but not too well by clusters due to a problem in matching Mexican-American student proportions.

**Only Mexican-American children were matched, as black children attending the comparative schools would not be involved in the comparison of white (non-black) children.

***Unweighed average of averages.

The aggregate data indicate that comparison schools were satisfactorily matched with cluster schools as a total group. Individually, schools were fairly well matched on previous academic achievement measures but not so well on ethnicity.

The comparison of second grade children did not include the children from Sam Rosen and W. J. Turner, sent to Kirkpatrick, because of their exposure to another variable, the Follow Through experimental program. In general, cluster schools conducted regular school programs, and for this reason, schools implementing either the Bilingual or Follow Through innovative programs were not included as comparative schools in order to avoid a confounding of the results of two treatments.

Black-majority schools used for comparative scores of black children are shown in Table 2. When clusters were examined separately, children at A. M. Pate served each time as a control group for the Rosedale Park, Versia Williams, and Sunrise clusters.

Table 2. Comparison Schools for Black Students

Cluster Home School				Comparison School			
School	ITBS 1970-71		Enrollment 70-71	School	ITBS 1970-71		Enrollment 70-71
	Gr. 4	Gr. 5			Gr. 4	Gr. 5	
Kirkpatrick	2.9	3.8	460	Carver	2.9	3.6	750
Como	3.1	3.9	1000	Dunbar	3.1	3.8	1000
Rosedale Park	3.3	4.1	500	A. M. Pate	3.0	3.7	1000
V. Williams	3.3	3.8	370				
Sunrise	3.4	4.1	450				
Guinn	2.8	3.6	475	Mitchell Blvd.	2.8	3.5	450
Aggregate	3.128	3.885	3255		2.983	3.685	3200

DESEGREGATION RESEARCH: ACADEMIC EFFECTS

Research data-gathering relative to the academic achievement of black students seems to have evolved through preliminary stages.

Early research was prompted by a new national interest in the school success of black children following the 1954 desegregation decision. Coleman's (5) report in 1966 and the U. S. Commission of Civil Rights Racial Isolation in the Public Schools (18) revealed the great gap between white and black achievement under segregated conditions. That learning deficit has been sufficiently documented.

Following desegregation in certain large urban school districts, writers began to report the effects, if any, on standardized test scores. Hansen (10) reported a general rise in scores on standardized achievement tests in 1960 by both black and white children following integration in the District of Columbia. Stallings (3), Hansen (3), and Lesser (3) arrived at similar findings in Louisville, Chicago, and New York respectively. These studies compared test scores of integrated and non-integrated students and concluded that the former were generally superior. These comparisons were mostly of system-wide test results over a period of years comparing scores of different children rather than the progress of the same (or similar) children after desegregation.

These general reports were replaced during the 1960's by more rigid examinations of the school achievement of black children before and after desegregation, comparisons being made in most cases with the growth of similar black children continuing to attend black-majority schools.

These types of studies are reviewed below.

Early Before-and-After Studies of Desegregation

New Rochelle, Rhode Island

When black parents at an all-black elementary school were offered transfers to white-majority schools, one-half of them accepted. No significant differences in test scores were noted between transferred and non-transferred students after desegregation, except at the kindergarten level (19).

Hartford, Connecticut

In Project Concern five suburban school districts voluntarily accepted inner-city children, mostly black or Puerto Rican, Kindergarten through Grade 5 (12). Both cognitive (i.e., PMA, WISC) and achievement tests were administered to bused and non-bused samples, and analysis of covariance applied to obtain equality. Differences in scores by bused and non-bused inner-city children after desegregation were significant at Kindergarten through Grade 3, but not at Grades 4 and 5.

New York (Queensborough)

In an early plan eight elementary schools in Queensborough were paired to equalize racial distributions. Compensatory programs were also initiated. These students were reported (3, p. 12) to have improved their standings in relation to national test norms after two years in the desegregated setting.

White Plains, New York

White Plains, with black scholastic population of seventeen per cent, completed system-wide integration in 1964-65 (7). An all-black elementary school was closed and its black students dispersed to ten previously white schools to provide a 10%-30% black enrollment at each. A three year study concluded that white students were doing as well as predecessors and that

black students who started first grade in an integrated setting were achieving significantly better than black students previously in their grade prior to desegregation.

Berkowitz Review

Berkowitz (3), in his review of desegregation research for the Pittsburgh Board of Public Education in 1967, concluded that black children in Syracuse, Philadelphia, Seattle, and Berkeley bused out of ghetto schools achieved greater success than remaining black students who were exposed to compensatory programs (3, p. 12). He concluded also that accomplishments of white students had not been damaged through integration (3, p. 13).

Weinberg's 1968 Review

Weinberg (19) reviewed the literature on desegregation for Phi Delta Kappa in 1968. Studies reported in that summary are described below.

At Jackson, Mississippi, mental ability tests were administered to first graders before and after integration. Changes in intelligence quotients of black students during the year were significant. No changes occurred for white first graders.

In Nashville, black upper elementary students in five desegregated schools were matched with black students in segregated schools. A five year study concluded that black children who were integrated in Grade 1 achieved significantly greater progress than that of the segregated black students; however, no effect was noted for black students desegregated in Grades 5 and 6.

Above average black and Puerto Rican Harlem students were bused to white, middle class Yorkville schools. It was reported that black bused children showed "dramatic improvement" in school work. Statistical data was not reported by Weinberg.

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In Seattle when 224 black students were bused from ten inner-city schools to 32 schools, report card grades declined. No achievement test scores were reported.

Pre and posttests were administered to a small group of black students bused from one Syracuse school to another. No significant difference was noted in achievement test scores of bused and non-bused after one year. White students' scores were not affected. Another group of black students were bused to another school the second year. Again white achievement was not affected, but black students gained significantly more than non-bused black students. Weinberg did not offer an explanation for the mixed findings.

A group of low-income students in Berkeley were bused to predominantly white schools. These students were considered to be above-average students in their home school. Before-and-after tests showed that bused students made greater gains than non-bused during the year.

Weinberg, like Berkowitz, after assessing the first few years of data gathering relative to effects of desegregation on black students concluded that the evidence was strong that desegregation benefits the academic achievement of black students and that the evidence is strong that "white students fail to suffer any learning disadvantage from desegregation".

Weinberg's 1970 Review

Weinberg reported desegregation research again in a 1970 edition (20) summarizing studies through 1969. For the most part, however, he repeated references to studies reported in the 1969 summary such as the East Harlem Project (dramatic improvement of bused black children), the Seattle study (bused black students' report card grades suffered), and the two Syracuse studies (no significant change reported in the first study; a significant

improvement in the reading of bused black students in the second study), and the Berkeley study (no significant change in achievement of bused children). He, also, cited Boston's Operation Exodus described earlier in the present paper.

Weinberg reported one new busing study not mentioned in his earlier book. Moorefield found no significant effects of desegregation by busing in Kansas City. The extent of the desegregation, however, was questioned as some receiving schools became black-majority schools due to the influx of the bused black students.

Weinberg again concluded that "desegregation improves the academic achievement of Negro children" (20, p. 87) and that "white children fail to suffer any disadvantage" (20, p. 88).

Recent Research

Recent reports about effects of desegregation on the academic achievement of black students have been less optimistic than the earlier ones reviewed above.

Two recent research summaries of desegregation effects have received considerable exposure in the press.

Armour (1) reviewed before-and-after test data gathered at several communities (i.e., White Plains, New York; Ann Arbor, Michigan; Riverside, California; and Hartford, Connecticut) in all grade levels over a five-year period. He also conducted research studies independently. He concluded that much of the data was seriously flawed (i.e., Berkeley and Rochester) but that the weight of the evidence indicated that black children were not making significant academic gains through desegregation brought about through busing or transfer procedures. Armour did agree that graduation from desegregated schools aided college entrance for blacks.

In an equally controversial three-year study financed by the Carnegie Foundation, Christopher Jencks (11), also of Harvard, concluded that both desegregation operations and compensatory programs have failed to significantly alter the black-white academic gap. Jencks contended that academic achievement of individual students is dependent, for the most part, on variables beyond the control of the school's sphere of influence. Jencks concluded that black students bused to white schools have made only slight improvement but suggests that motivation and aspiration may have been positively affected.

Other recent studies carried out in single school districts and their findings are listed below.

Riverside, California

Before-and-after measures were taken as Riverside (15) undertook to integrate a school population that consisted of Anglos (82 per cent), Mexican-American (11 per cent), and Blacks (6 per cent). Standardized test scores by ethnic group were compared for the 1966 pre-integration year and the 1968 post-integration year. No significant change was revealed for either of the three ethnic groups.

Rochester, New York (Fifteen Point Plan)

In Rochester (14) black students' achievement in three settings was compared: 1) black children remaining in segregated inner-city schools with compensatory programs; 2) black children remaining in desegregated inner-city schools (white children were bused in) with compensatory programs; and 3) black students bused to suburban schools. No significant statistical differences in achievement were generally noted after two years in either black or white achievement.

Berkeley, California

In a 1966 pilot program preceding system-wide desegregation proceedings in Berkeley, black students who were bused to white-majority schools incurred improved achievement while that of white receiving students did not change. After system-wide desegregation through two-way busing, school officials reported that student achievement had been maintained.

Buffalo, New York

Three hundred fifty inner-city black second grade students were transferred to suburban white-majority schools in 1966 (4). In a short-term study transferred students made significantly greater gains than black students who remained in inner-city schools. In 1970, 1,200 inner-city black students, Grades 5 through 7, were bused to twenty-two receiving schools where the population was primarily white (2). Findings reported included: 1) transferred blacks made greater gains; 2) white achievement did not suffer; 3) principals and teachers in receiving schools expressed the opinion that the integration program demonstrated positive educational results; and 4) parents of black and white students agreed that the program was educationally sound.

Boston, Massachusetts (Project Exodus)

In a 1967-68 voluntary school integration plan utilizing the open enrollment concept, black students were bused out of inner-city segregated schools to racially balanced schools (16). After one year in a desegregated setting, Exodus children showed greater improvement in changes on achievement tests than black students continuing to attend inner-city black-majority schools.

Fort Worth, Texas

Cypert (6) and Evans (8), working independently, collected data on newly integrated white and black students respectively following general

system-wide elimination of de jure segregation. Schools were desegregated through neighbor desegregation rather than by overt school strategies. Neither writer found significant changes in school achievement after one year.

Toledo, Ohio

In the Fulton-Glenwood Transfer Program fourth, fifth, and sixth grade black students were transferred to eleven receiving schools (17). Pre and post achievement tests (ITBS) were administered to bused students and to a comparative group of non-bused students. Findings reported included: 1) achievement of receiving students was unchanged; 2) fourth grade bused black students' achievement was unchanged; 3) fifth and sixth grade bused black students achieved less than the comparative group; and 4) teachers reported increased disciplinary problems.

Sacramento, California

Positive learning effects for Black and Mexican-American students were reported in 1970-71 at Sacramento (9) where desegregation had been achieved primarily through busing. Sufficient numbers of Black students remained in black-majority schools to allow comparisons of bused and non-bused samples. At grade levels 2 through 6, integrated Black students attained higher arithmetic scores (CAT) than their non-integrated counterparts. Integrated Mexican-American students improved their previous test performance in reading and in mathematics. It was reported that most integrated Black students scored at or above the national average on the tests.

Summary Statements about Desegregation Research

During the early years of desegregation research, the evidence was strong that academic benefits would accrue to black students without endangering that of white students, particularly if black students were desegregated at an early age. These were the findings, for example, at New Rochelle, Hartford, and White Plains.

Recent studies and re-analyses of early data have generated more cautious findings. The reports continue to indicate strongly that desegregation procedures will not be damaging to white achievement, but the balance of the data is less clearly supportive of improved academic effects for black students. This caution is reflected in reports from Riverside, Rochester, and Berkeley. Added positive results for black students have recently been reported from Buffalo and Sacramento. Two recent general reviews (1, 11) of desegregation studies have not found desegregation to be effective in substantially improving black achievement.

The weight of the evidence provides some support for expecting improved achievement for black students without detrimental effects for white students as a result of desegregation procedures.

EFFECTS OF DESEGREGATION ON THE ACADEMIC ACHIEVEMENT OF BLACK STUDENTS

The effect of the desegregation plan on black students was assessed through testing procedures outlined in the previous section.

Fall and spring tests, measuring arithmetic and reading skills, were administered to all black fourth and fifth graders bused to a white-majority school and to a random selection of black students continuing to attend black-majority schools.

Fourth and Fifth Grade Black Students

Mean scores of the fall and spring test administration for bused and non-bused black fourth and fifth graders were statistically compared to determine when differences represented chance fluctuations and when differences were significant (real). These comparisons are summed, by cluster, in Table 3.

District-wide results for all clusters indicate that bused black fifth graders achieved significantly greater growth in 1971-72 in mathematics and reading skills than did similar black students continuing to attend black-majority neighborhood schools. The growth in reading and arithmetic skills of fourth grade black students bused to white-majority schools did not significantly differ from that of similar black students continuing to attend black-majority neighborhood schools.

Results at individual clusters must be interpreted with caution due to small sample sizes of control subjects.

Table 3. Comparisons of Academic Scores of Fourth and Fifth Grade Bused and Non-Bused Black Students

Cluster	Grade Four Comparisons**		Grade Five Comparisons**	
	Arithmetic	Reading	Arithmetic	Reading
Como	Significant Difference (favor non-bused)	No Significant Difference	No Significant Difference	Significant Difference (favor bused)
Guinn	No Significant Difference	No Significant Difference	No Significant Difference	No Significant Difference
Kirkpatrick	No Significant Difference	No Significant Difference	Significant Difference (favor bused)	Significant Difference (favor bused)
Rosedale Park	No Significant Difference	No Significant Difference	No Significant Difference	No Significant Difference
Sunrise	No Significant Difference	No Significant Difference	Significant Difference (favor bused)	No Significant Difference
Versia Williams	No Significant Difference	No Significant Difference	No Significant Difference	No Significant Difference
Aggregate	No Significant Difference	No Significant Difference	Significant Difference (favor bused)	Significant Difference (favor bused)

*The final row presents district-wide results for all clusters.

**Comparisons of spring scores, adjusted for initial fall differences, of bused and non-bused black students. For actual scores, see Appendix A.

Summary Statements about Black Achievement

Four district-wide comparisons were made of test scores of bused black students attending schools desegregated through the cluster plan and those of similar black students who continued to attend black-majority schools. Two of the four comparisons revealed statistically significant differences, all favoring the bused black students. These two significant differences were obtained in 1) reading comprehension at grade five, and 2) mathematics at grade five.

These data support desegregation as a means of improving the academic growth of elementary black students.

EFFECTS OF DESEGREGATION ON THE
ACADEMIC ACHIEVEMENT OF BUSED WHITE STUDENTS

Data relative to the effects of desegregation procedures on the academic achievement of bused white students was gathered in accordance with procedures outlined in the first section of the present report. The plan provided for the fall and spring testing of bused white second graders at the cluster schools and comparing their year's growth with that of similar white second graders who attended neighborhood white-majority schools during 1971-72.

Reading and vocabulary scores of bused white second graders were compared with those of similar white second graders who attended white-majority neighborhood schools during 1971-72.

Comparisons of the mean scores of these two groups of students are presented in Table 4.

Table 4. Comparisons of Academic Scores of
Bused and Non-Bused
White Second Graders

Cluster	Comparisons* of Reading Mean Score	Comparisons* of Vocabulary Mean Score
Como	No Significant Difference	No Significant Difference
Guinn	No Significant Difference	Significant Difference (favor non-cluster)
Kirkpatrick**	-----	-----
Rosedale Park	Significant Difference (favor cluster)	No Significant Difference
Sunrise	No Significant Difference	No Significant Difference
Versia Williams	No Significant Difference	Significant Difference (favor non-cluster)
Aggregate	No Significant Difference	No Significant Difference

*Comparisons of spring mean scores after adjustments for initial fall differences. Actual scores are reported in Appendix D.

**Excluded from analysis of data at grade two due to experimental program.

The report of comparisons presented in Table 4 show that the year's gain of bused white children on reading and vocabulary tests did not significantly differ from that incurred by similar white students who attended white-majority neighborhood schools.

An examination of the comparisons by individual clusters reveal that differences in mean test score gains on reading and vocabulary between cluster and non-cluster students were not significant at the Como and Sunrise clusters.. In the Guinn and Versia Williams clusters, the non-cluster students gained significantly more than cluster students on vocabulary test scores. In one cluster the bused children significantly outgained their non-cluster counterparts on a measure. At the Rosedale Park cluster bused white second graders significantly outgained similar white students who attended white-majority neighborhood schools on the reading test.

Summary of Effects on White Achievement

Reading and vocabulary scores of second grade white students bused to previously black-majority schools did not differ significantly from those earned by similar white second grade students continuing to attend neighborhood schools.

ETHNIC FRIENDSHIP

The evaluation design developed to measure the effects of court-ordered integration procedures at elementary schools included an assessment of ethnic cleavage. The hypothesis to be tested reads as follows:

Hypothesis 5.

Integrated children in cluster schools will not isolate or reject children of other ethnic groups.

The design included both a fall and spring sociometric measure at grades 3, 4, and 5 in which teachers merely asked their students to identify three students with whom they would like to sit at lunch.

Procedures

All twenty-one elementary schools in the six clusters to which black students were bused were included in the study. From these schools, a twenty-five per cent random sample of classrooms at each grade level (grades 3-5) was identified. Thus, data was gathered from approximately 1300 students in fifty-two classrooms in both the fall and spring. Responses were obtained from 869 white children, 345 black children, and 106 Mexican-American children in the fall, and 912 white children, 383 black children, and 113 Mexican-American children in the spring.

Teachers allowed each student to name three friends from a prepared classroom list with whom he would like to sit at lunch. This question was selected for the study as it was perceived as more likely to reflect friendship groups than "work partners" or "team partners".

Student responses and ethnicity of all students were remanded to the Research Department for tabulation. For the purpose of this study, Mexican-American children are identified separately rather than being included with "white" children.

Results

Both fall and spring data are presented in Table 5. Choices of each ethnic group are reported by grade levels in terms of proportion of choices.

Table 5. Changes in Ethnicity of Friendship Choices at Cluster Schools
Grades 3, 4, 5
1971-72

Grade Level	Ethnicity of Friendship Choices								
	Choices by Black			Choices by Brown			Choices by White		
	Black Black	Black Brown	Black White	Brown Brown	Brown Black	Brown White	White White	White Black	White Brown
Third Grade									
Fall	44%	6%	50%	23%	16%	60%	79%*	12%*	10%
Spring	46%	9%	45%	23%	17%	60%	71%*	16%*	13%
Fourth Grade									
Fall	52%	8%	40%	35%	10%	55%	81%	13%	6%
Spring	57%	6%	38%	38%	14%	48%	80%	12%	8%
Fifth Grade									
Fall	52%	3%*	45%	18%	12%	71%*	83%	10%	7%
Spring	54%	7%*	39%	28%	19%	53%*	82%	11%	7%
Total for All Grades									
Fall	49%	6%	45%*	26%	13%	61%	81%*	11%	7%*
Spring	52%	7%	41%*	29%	17%	54%	78%*	13%	9%*

*Fall and spring proportions differ significantly.

Data was also tabulated to reveal the proportion of each ethnic group choosing only lunchmates of their ethnicity. Results of this tabulation are presented in Table 6.

Table 6. Changes in Proportion of Students Making Ethnic-Exclusive Choices

Type of Ethnic-Exclusive Choice	Proportion of Students Making the Choice Indicated							
	Grade 3		Grade 4		Grade 5		All Grades	
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
White-White Only	52%	53%**	62%	63%	57%	59%**	57%	59%
Black-Black Only	14%	13%**	18%*	31%*	28%	28%**	20%	24%
Brown-Brown Only	4%	7%	12%	9%	3%	3%	7%	7%
Aggregate for Each Grade	37%	38%	46%	49%	47%	48%	43%	45%

*Fall and spring proportions are significantly different ($P=.05$).
 **Third and fifth graders' proportions differ significantly ($P=.05$).

Friendship Choices of Black Students

An examination of the fall data for all grades shows that black students chose white lunchmates (45 per cent of their choices) almost as often as they chose black lunchmates (49 per cent of their choices). In the spring, however, black students made significantly fewer white choices (41 per cent of their choices).

An examination of the black-white choices at the various grade levels indicates that the total decrease in black-white choices was distributed among the three grades, rather than appearing at a particular grade level. The only significant change in black choices at a particular grade level occurred at the fifth grade in which black students significantly increased their choice of Mexican-American students.

An inspection of Table 6 shows that the vast majority of black students chose at least one child of another ethnic group both in the fall (80%) and the spring (74%). This fall-to-spring change was not statistically significant. When choices are viewed by grade level, only one significant increase in black exclusiveness is noted, that at the fourth grade level.

Both fall and spring data reveal more racial exclusiveness by older black students. The proportion of fifth grade black students choosing black students only was significantly greater than that of third grade black students at each data gathering period.

Friendship Choices of Mexican-American Children

The number of Mexican-American students in the study, approximately 100, was small compared to that of black or white students. Small changes in frequencies are, therefore, somewhat magnified in terms of percentages. For this reason, the data about Mexican-American children must be interpreted with considerable caution.

Data in Table 5 reports the proportion of choices made by Mexican-American students. The totals for all grades show that about three-fourths of their choices (74 per cent in the fall and 71 per cent in the spring) were for students of another ethnic extraction. The only statistically significant change observed was at grade five, where the frequency with which white children were chosen slipped from seventy-one per cent to fifty-four per cent. No significant changes in choices by Mexican-American students were revealed for the total group.

Data in Table 6 reports the proportion of Mexican-American students making ethnic-exclusive choices of lunchmates. Only 7 per cent of these students chose members of their own group exclusively, while 93 per cent made at least one choice that was of a child of another ethnic group.

Friendship Choices of White Students

The proportion of choices by white students are reported in Table 4. Data for all grades show that the vast majority of choices (81 per cent) made by white students in the fall were for white lunchmates. This proportion decreased significantly during the year to 78 per cent. At the end of the year, significantly more Mexican-American students were chosen by white students than at the beginning of the year. The frequency with which black students were chosen by white students also increased slightly during the year.

The proportions of students choosing members of their own ethnic group exclusively are shown in Table 6. These data reveal that 57 per cent of the white students in all three grades chose white students only as lunchmates in the fall. That proportion did not significantly change during the year. Obviously, over forty per cent of the white students made at least one choice that was non-white both in the fall and in the spring.

Both fall and spring data reveal more racial exclusiveness by older white students. The proportion of fifth grade white students choosing white students only was significantly greater than that of third grade white students at each data gathering period.

Summary Statements about Friendship Choices

The evidence indicates that students attending grades three through five at cluster schools did not reject or withdraw from students whose ethnicity differed from their own. That conclusion is supported by the data in Table 6 showing that more than one-half of the students (57 per cent in the fall and 55 per cent in the spring) chose at least one lunchmate that was of an ethnic group other than his or her own. By ethnic group, 41 per cent of the white students, 76 per cent of the black students, and 93 per cent of the brown students made at least one out-group choice. There was

no significant change in the proportions of students of any ethnicity making ethnic-exclusive choices from the beginning to the end of the year.

A tendency for ethnic-exclusiveness to increase with age was indicated. Both black and white older children made significantly more in-group exclusive choices than younger children (Table 6). It should be noted that this finding was generated by cross-sectional rather than longitudinal data.

SUMMARY

In order to aid an assessment of the effects of the court-ordered desegregation procedures of 1971-72, data were collected relative to the academic achievement of bused black and white students and of similar students continuing to attend predominantly white or predominantly black neighborhood schools. Pre and post tests were administered measuring basically reading and arithmetic skills. Friendship data were also collected to assess the extent to which students accepting were classmates of an ethnic background other than their own.

Data gathered relative to the effects of the desegregation procedures on the academic achievement of bused students as measured by standardized tests may be summarized as follows:

- 1) The fall-to-spring growth in reading and arithmetic skills of black fourth graders bused to previously predominantly white schools in 1971-72 did not differ significantly from that of black fourth graders who attended predominantly black neighborhood schools in 1971-72 (Table 3).
- 2) The fall-to-spring growth in reading and arithmetic skills of black fifth graders bused to previously predominantly white schools in 1971-72 significantly exceeded that of black students who attended predominantly black neighborhood schools in 1971-72 (Table 3).
- 3) The fall-to-spring growth in vocabulary development and reading comprehension of white second graders bused to

previously predominantly black schools in 1971-72 did not significantly differ from that of similar white second graders who attended predominantly white neighborhood schools in 1971-72 (Table 4).

- 4) Sociometric data gathered in the fall and the spring indicated that students attending grades three through five in cluster schools consistently included children of an ethnicity other than their own in their friendship groups. More than one-half of the students (55 per cent) in the spring chose at least one student of another ethnicity as a lunchmate.

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APPENDIX

- A. Mean Academic Test Scores of Bused and Non Bused Fourth
and Fifth Grade Black Students by Cluster
- B. Academic Scores of Bused and Non-Bused Second Grade
White Students

APPENDIX A

Mean Academic Test Scores of Bused and Non-Bused Black Students by Cluster

Cluster	Grade Four										Grade Five									
	Arithmetic					Reading					Arithmetic					Reading				
	N	Pre	Post	Adj. Post	N	Pre	Post	Adj. Post	N	Pre	Post	Adj. Post	N	Pre	Post	Adj. Post	N	Pre	Post	Adj. Post
Como	Bused	120	3.5	3.9	3.9*	120	3.5	3.7	3.7	118	4.2	4.6	4.5	115	4.0	4.2	4.2*			
	Non-Bused	47	3.6	4.3	4.3*	49	3.5	3.7	3.7	55	4.1	4.2	4.2	55	4.0	3.9	3.9*			
Quinn	Bused	36	3.2	3.0	3.0	37	2.7	3.0	2.9	42	3.7	3.9	3.9	40	3.6	3.5	3.5			
	Non-Bused	20	2.6	2.9	3.0	13	2.0	2.4	2.5	24	3.6	4.1	4.1	24	3.7	3.7	3.7			
Kirkpatrick	Bused	55	3.0	3.5	3.4	56	3.1	3.1	3.0	42	4.0	4.4	4.4*	43	3.7	4.1	4.1*			
	Non-Bused	37	3.0	3.2	3.3	42	2.8	3.0	3.1	45	3.7	3.8	3.9*	44	3.6	3.6	3.7*			
Rosedale Park	Bused	65	3.2	4.0	3.9	67	3.4	3.7	3.6	76	4.1	4.6	4.5	79	4.2	4.4	4.2			
	Non-Bused	65	3.0	3.6	3.7	67	2.7	3.1	3.3	57	3.9	4.2	4.3	58	3.4	3.7	4.0			
Sunrise	Bused	72	3.1	3.5	3.5	71	3.0	3.3	3.3	63	4.1	4.6	4.5*	61	3.8	4.1	4.0			
	Non-Bused	75	3.1	3.6	3.7	76	2.7	3.2	3.2	57	3.9	4.2	4.2*	58	3.4	3.7	3.8			
V. Williams	Bused	44	3.3	3.5	3.4	42	3.1	3.4	3.3	43	4.0	4.4	4.4	43	3.8	3.9	3.8			
	Non-Bused	75	3.1	3.6	3.7	76	2.7	3.2	3.2	57	3.9	4.2	4.2	58	3.4	3.7	3.8			
Aggregate	Bused	392	3.3	3.7	3.6	393	3.2	3.5	3.4	385	4.0	4.5	4.4*	381	3.9	4.1	4.1*			
	Non-Bused	179	3.2	3.7	3.7	180	2.9	3.2	3.3	181	3.9	4.1	4.2*	181	3.7	3.8	3.9*			

*Significantly different for bused and non-bused scores ($P = .05$).

APPENDIX B

Academic Scores of Bused and Non-Bused Second Grade White Students

Cluster		Reading				Vocabulary			
		N	Pre	Post	Adj. Post	N	Pre	Post	Adj. Post
Como	Cluster	189	14	25	25	183	25	37	37
	Non-Cluster	244	16	25	25	286	25	37	37
Guinn	Cluster	105	9	15	15	108	16	24	24*
	Non-Cluster	72	9	16	16	108	17	29	29*
Kirkpatrick	Cluster	82	10	15	15*	81	18	25	23*
	Non-Cluster	82	10	18	19*	117	15	27	29*
Rosedale Park	Cluster	102	12	23	24*	137	22	33	32
	Non-Cluster	140	14	22	22*	234	21	33	33
Sunrise	Cluster	91	9	17	17	93	18	28	30
	Non-Cluster	92	11	19	19	118	22	30	29
V. Williams	Cluster	65	9	18	19	43	17	28	30*
	Non-Cluster	86	12	21	20	95	21	33	33*
Aggregate	Cluster	552	11	20	21	520	21	32	32
	Non-Cluster	634	13	22	21	745	22	33	33

*Means of cluster and non-cluster students are significantly different.

**Not included in aggregate data due to presence of experimental program.